09/939225

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    (FILE 'HOME' ENTERED AT 14:27:05 ON 25 NOV 2002)

    FILE 'CAPLUS' ENTERED AT 14:27:17 ON 25 NOV 2002
L1        40405 S (ANIMAL OR VEGETABLE) (P) (BY-PRODUCT OR BYPRODUCT)
L2          521 S L1 AND (COMBUST? OR BURN OR IGNIT?)
L3          101 S L2 AND FUEL

    FILE 'STNGUIDE' ENTERED AT 14:29:27 ON 25 NOV 2002

    FILE 'CAPLUS' ENTERED AT 14:30:22 ON 25 NOV 2002

    FILE 'STNGUIDE' ENTERED AT 14:30:22 ON 25 NOV 2002
L4            0 S (ANIMAL OR VEGETABLE) (P) (BY PRODUCT OR BYPRODUCT)

    FILE 'CAPLUS' ENTERED AT 14:31:22 ON 25 NOV 2002
L5        40405 S (ANIMAL OR VEGETABLE) (P) (BY PRODUCT OR BYPRODUCT)
L6         1051 S (ANIMAL OR VEGETABLE) (P) BYPRODUCT

=> s l6 and (combust? or burn? or ignit?)
         200206 COMBUST?
         147976 BURN?
          60557 IGNIT?
L7           30 L6 AND (COMBUST? OR BURN? OR IGNIT?)

=> d l7 1-30 all
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L7 ANSWER 1 OF 30 CAPLUS COPYRIGHT 2002 ACS
AN 2002:885432 CAPLUS
TI Dioxins in commercial united states baby food
AU Schecter, Arnold; Wallace, Deborah; Pavuk, Marian; Piskac, Amanda; Paepke, Olaf
CS University of Texas School of Public Health at Dallas, Dallas, TX, USA
SO Journal of Toxicology and Environmental Health, Part A (2002), 65(23), 1937-1943
CODEN: JTEHF8; ISSN: 1528-7394
PB Taylor & Francis Inc.
DT Journal
LA English
CC 17 (Food and Feed Chemistry)
AB This is the first known study of dioxins, dibenzofurans, and polychlorinated biphenyls (PCBs) in com. American bottled baby foods purchased in the United States. Dioxins, persistent chlorinated orgs., are inadvertent **byproducts** of chem. synthesis or **combustion** and are toxic to humans and other **animals**. Almost all dioxins enter the body through food consumption, specifically from food products contg. **animal** fat. Major-brand bottled baby food contg. meat was purchased at U.S. supermarkets and 12 pooled samples were analyzed for dioxins using high-resoln. gas chromatog. with high-resoln. mass spectrometry. Low levels of dioxins were found in these products. The range was from 28 to 226 parts per quadrillion (ppq) dioxin toxic equiv. (TEQ). This is reported on a whole or wet wt. (as eaten) basis. As a comparison, findings of dioxins in U.S. supermarket meat ranged from 28 to 540 ppq. Although dioxin levels are generally lower in these baby foods than in meat or poultry, the presence of dioxins in com. baby food contg. meat is cause for concern.

L7 ANSWER 2 OF 30 CAPLUS COPYRIGHT 2002 ACS
AN 2002:835249 CAPLUS
TI Consequences of the ban of by-products from terrestrial animals in livestock feeding in Germany and the European Union: alternatives, nutrient and energy cycles, plant production, and economic aspects

AU Rodehutscord, M.; Abel, H. J.; Friedt, W.; Wenk, C.; Flachowsky, G.; Ahlgrimm, H.-J.; Johnke, B.; Kuehl, R.; Breves, G.
CS Institute of Nutritional Sciences, University of Halle-Wittenberg, Germany
SO Archives of Animal Nutrition (2002), 56(2), 67-91
CODEN: AANUET; ISSN: 0003-942X
PB Taylor & Francis Ltd.
DT Journal
LA English
CC 18 (Animal Nutrition)
AB Consequences of the ban of meat and bone meal (MBM) and **animal** fat with regard to livestock feeding, cropping, ecol. and economy where investigated with an inter-disciplinary approach for Germany and the European Union. Calcns. were made for different prodn. systems with pigs and poultry on the basis of statistical data for the prodn. and for the feed markets as well as from requirement data for the resp. species and prodn. system. (1.) The ban of MBM from feeding caused a need for alternative protein sources. If all the amt. of protein from MBM is to be replaced by soybean meal, in Germany and the EU about 0.30 and 2.30 .cntdot. 106 t would be needed each year (supplementary amino acids not considered). Alternatively, doubling the grain legume acreage in Germany to about 420,000 ha would supply a similar amt. of protein. A wider application of phase feeding with adjusted dietary amino acid concns., however, would allow for saving protein to an extent which is similar to the amt. of protein that was contributed by MBM in recent years. Thus, the ban is a minor problem in terms of ensuring amino acid supply. (2.) However, alternative plant ingredients cannot compensate for the gap in P supply that is caused by the ban. An addnl. demand for inorg. feed phosphates of about 14,000 and 110,000 t per yr is given in Germany and the EU, resp. So far, this gap is filled almost completely by increased mining of rock phosphates. Alternatively, a general application of microbial phytase to all diets would largely fill this gap. Until the ban, MBM contributed to 57% of the supplementation of P that was needed for pigs and poultry. The ban of MBM makes large amts. of P irreversibly disappearing from the food chain. (3.) Energy from slaughter offal and cadavers can be utilized in different technologies, in the course of which the efficiency of energy utilization depends on the technol. applied. It is efficient in the cement work or rotation furnace if heat is the main energy required. In contrast, the energetic efficiency of fermn. is low. (4.) Incineration or co-incineration of MBM and other **byproducts** causes pollution gas emissions amounting to about 1.4 kg CO2 and 0.2 kg NOx per kg. The CO2 prodn. as such is hardly disadvantageous, because heat and elec. energy can be generated by the **combustion** process. The prevention of dangerous gaseous emissions from MBM **burning** is current std. in the incineration plants in Germany and does not affect the environment inadmissibly. (5.) The effects of the MBM ban on the price for compd. feed is not very significant. Obviously, substitution possibilities between different feed ingredients helped to exchange MBM without large price distortions. However, with each kg MBM not used in pig and poultry feeding economic losses of about 0.14 have to considered. In conclusion, the by far highest proportion of raw materials for MBM comes as **byproducts** from the slaughter process. Coming this way and assuring that further treatment is safe from the hygienic point of view, MBM and **animal** fat can he regarded as valuable sources of amino acids, minerals and energy in feeding pigs and poultry. Using them as feedstuffs could considerably contribute to the goal of keeping limited nutrients, phosphorus in particular, within the nutrient cycle and dealing responsible with limited resources.
RE.CNT 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD
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(2) AFZ (Association Francaise de Zootechnie); AmiPig: Ileal standardised

digestibility of amino acids in feedstuffs for pigs 2000
(3) Abel, H; Proc Soc Nutr Physiol 2002, V11, P201
(4) Anon; Statistisches Jahrbuch uber Ernahrung, Landwirtschaft und Forsten 2000 2000
(5) Bockisch, F; Landbauforschung Volkenrode. Spezial issue 2000, 211
(6) DLG (Deutsche Landwirtschaftsgesellschaft); Futterwerttabellen -- Schweine. 6th Ed 1991
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(9) Degussa; AminoDat 1.0: Amino acid composition of feedstuffs. 4th revised edition 1996
(10) Dungelhoef, M; Ubers Tierernahrg 1995, V23, P133
(11) EFPRA (European Fat Processors and Renderers Association); Statistics collection 2001
(12) EURA (European Renderers Association); Product Development Committee Report 1998 1999
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(14) Finucane, M; Proc Nutr Soc 2002, V61, P31
(15) Frauen, M; 24th ISF World Congress 2001
(16) Friedt, W; Nachwachsende Rohstoffe fur die Chemie 2001, P47
(17) Friedt, W; Proc 10th Intern Rapeseed Congress 1999
(18) GFE (Gesellschaft fur Ernahrungsphysiologie); Energie- und Nahrstoffbedarf landwirtschaftlicher Nutztiere, Empfehlungen zur Energie- und Nahrstoffversorgung der Legehennen un Masthuhner (Broiler) 1999, V7
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(21) Hilger, J; PhD Thesis, University of Bonn 2000
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(23) Jeroch, H; Ernahrung landwirtschaftlicher Nutztiere 1999
(24) Johnke, B; Vortragsmanuskript VDI Bildungswerk zum Seminar 2000, BW 43-59-12
(25) Kamphues, J; Dtsch tierarztl Wschr 2001, V108, P283 MEDLINE
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(27) Kucinskas, A; PhD thesis, University of Halle-Wittenberg 1999
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(31) Membrez, Y; Aspects energetiques des filieres d'elimination et de valorisation des dechets animaux 1997
(32) Mengel, K; Europ J Agron 1997, V7, P221
(33) Miller, E; Livest Prod Sci 1988, V19, P159
(34) NRC; Nutrient Requirements of Poultry 1994
(35) Nehring, K; Futtermitteltabellenwerk 1970
(36) Nottrodt, A; Technische Anforderungen und allgemeine Empfehlungen fur die Entsorgung von Tiermehl und Tierfett in Verbrennungsanlagen 2001
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L7 ANSWER 3 OF 30 CAPLUS COPYRIGHT 2002 ACS
AN 2002:832729 CAPLUS
TI Stabilization of organic wastes with mineral byproducts and controlling its **ignitability**
IN Logan, Terry J.; Faulman, Ervin Louis
PA N-Viro International Corp., USA
SO PCT Int. Appl., 25 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C02F011-14
CC 60-4 (Waste Treatment and Disposal)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002085802	A1	20021031	WO 2002-US11030	20020411

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2001-285268P P 20010423
AB Org. wastes are stabilized by combining them with at least one mineral **byproduct** at a certain ratio to avoid spontaneous **ignition** of the mixt., followed by drying in a direct or indirect dryer to form a stabile waste solid. Prior to the treatment the **ignition** threshold temps. for different component ratios of the mixt. are detd. The org. waste can be sewage sludge, **animal** manures, biosolids, pulp and paper sludges, food processing waste, cardboard and other industrial org. waste. The mineral **byproduct** can be a coal **combustion byproduct**, wood ash, cement kiln dust, gypsum, mineral and rock fines, lime, quicklime, diatomaceous earth, and limestone.
ST org waste stabilization mineral byproduct solid **ignition** point
IT Wood
(ash, stabilizer; stabilization of org. wastes with mineral byproducts and controlling its **ignitability**)
IT Solid wastes
(biol.; stabilization of org. wastes with mineral byproducts and controlling its **ignitability**)
IT Dust
(cement-kiln, stabilizer; stabilization of org. wastes with mineral byproducts and controlling its **ignitability**)
IT Ashes (residues)
(coal fly, stabilizer; stabilization of org. wastes with mineral byproducts and controlling its **ignitability**)
IT Wastewater treatment sludge
(dewatered; stabilization of org. wastes with mineral byproducts and controlling its **ignitability**)
IT Ashes (residues)

(fly, stabilizer; stabilization of org. wastes with mineral byproducts and controlling its **ignitability**)

IT Solid wastes
(food-processing; stabilization of org. wastes with mineral byproducts and controlling its **ignitability**)

IT Dust
(mineral, stabilizer; stabilization of org. wastes with mineral byproducts and controlling its **ignitability**)

IT Solid wastes
(org.; stabilization of org. wastes with mineral byproducts and controlling its **ignitability**)

IT Food processing
(solid wastes; stabilization of org. wastes with mineral byproducts and controlling its **ignitability**)

IT Pulping liquors
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(spent; stabilization of org. wastes with mineral byproducts and controlling its **ignitability**)

IT Drying
Ignition point
Manure
(stabilization of org. wastes with mineral byproducts and controlling its **ignitability**)

IT Minerals
RL: NUU (Other use, unclassified); USES (Uses)
(stabilization of org. wastes with mineral byproducts and controlling its **ignitability**)

IT Diatomite
Lime (chemical)
Limestone
RL: NUU (Other use, unclassified); USES (Uses)
(stabilizer; stabilization of org. wastes with mineral byproducts and controlling its **ignitability**)

IT Paperboard
(waste paperboard; stabilization of org. wastes with mineral byproducts and controlling its **ignitability**)

IT 13397-24-5, Gypsum
RL: NUU (Other use, unclassified); USES (Uses)
(stabilizer; stabilization of org. wastes with mineral byproducts and controlling its **ignitability**)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
(1) Atlantic Richfield Co; EP 0303339 A 1989
(2) Glover, A; US 5741346 A 1998
(3) Nicholson, J; US 4554002 A 1985
(4) South West Water Services Ltd; GB 2295146 A 1996 CAPLUS

L7 ANSWER 4 OF 30 CAPLUS
AN 2002:757312 CAPLUS
DN 137:237085
TI Method and reactor for gasifying biomass and biological wastes
IN Ries, Jean; Vamquaethem, Michel; Guerin, Alain; Mamdret, Louis; Ruault, Daniel
PA Biomasse Energie, Fr.
SO Fr. Demande, 15 pp.
CODEN: FRXXBL
DT Patent
LA French
IC ICM C10B053-00
ICS C10B047-00; C10J003-68; C10J003-72; C01B031-08
CC 60-4 (Waste Treatment and Disposal)

Section cross-reference(s): 51

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 2818281	A1	20020621	FR 2000-16465	20001218

AB The present the invention describes a process of treatment of waste, in particular plant wastes, org. wastes or **animal** meals consisting of carrying out a rapid **combustion** in a first room in thermal contact with which a second room into which one introduces waste which circulates by gravity and at the base of which one recovers, on the one hand, gases, and on the other hand activated carbon, the gas extd. being reintroduced into the room where it constitutes the greatest part or the totality of the fuel necessary for the maintenance of the rapid **combustion**. The invention also describes the boiler used in this process, as well as the **byproducts** of the known as process, including activated carbon with great heat-transferring surface, and fuel gases, in particular of methane which may undergo beneficiation to form methanol and hydrogen.

ST reactor gasification biomass biol waste animal meal; activated carbon methane gasification biomass

IT Fuel gas manufacturing
(gasification, app.; reactor and method for gasifying biomass and biol. wastes)

IT Fuel gas manufacturing
(gasification; reactor and method for gasifying biomass and biol. wastes)

IT Bone meal
Meat
(meat-and-bone meal; reactor and method for gasifying biomass and biol. wastes)

IT Wastes
(org.; reactor and method for gasifying biomass and biol. wastes)

IT **Combustion**
(rapid; reactor and method for gasifying biomass and biol. wastes)

IT Biomass
(reactor and method for gasifying biomass and biol. wastes)

IT 7440-44-0, Carbon, processes
RL: CPS (Chemical process); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); FORM (Formation, nonpreparative); PROC (Process)
(activated; reactor and method for gasifying biomass and biol. wastes)

IT 67-56-1, Methanol, processes 1333-74-0, Hydrogen, processes
RL: CPS (Chemical process); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); FORM (Formation, nonpreparative); PROC (Process)
(beneficiation of methane to form; reactor and method for gasifying biomass and biol. wastes)

IT 74-82-8, Methane, processes
RL: CPS (Chemical process); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); FORM (Formation, nonpreparative); PROC (Process)
(reactor and method for gasifying biomass and biol. wastes)

L7 ANSWER 5 OF 30 CAPLUS COPYRIGHT 2002 ACS

AN 2001:567130 CAPLUS

DN 135:307738

TI Living in a chemical environment - persistent organic pollutants

AU Sanghi, Rashmi

CS Facility for Ecological and Analytical Testing, IIT, Kanpur, 208016, India

SO Resonance (2001), 6(7), 64-73
CODEN: RESOFE; ISSN: 0971-8044

PB Indian Academy of Sciences

DT Journal
LA English
CC 59-2 (Air Pollution and Industrial Hygiene)
Section cross-reference(s): 4, 45
AB The combination of industrial development, exponential growth of human settlements, and ever-increasing use of synthetic substances is adversely impacting the environment and human health. These chems. find their way into soil, air, water, and food, and are in plant, **animal**, and human tissues. There is very little effective national or international control of man-made chems. Topics discussed include: persistent org. pollutants (organochlorine pesticides, industrial chem. products, **combustion byproducts**); and sources and dispersal (pesticides, industrial chems., dioxins and furans).
ST environmental pollution persistent org chem worldwide; health hazard persistent org chem environmental pollution worldwide
IT Pesticides
(organochlorine; sources and dispersion of, environmental pollution by, and health hazards from persistent org. compds. worldwide)
IT Dispersion (of materials)
(persistent org. compds.; sources and dispersion of, environmental pollution by, and health hazards from persistent org. compds. worldwide)
IT Environmental pollution
Health hazard
(sources and dispersion of, environmental pollution by, and health hazards from persistent org. compds. worldwide)
IT Organic compounds, biological studies
RL: ADV (Adverse effect, including toxicity); BOC (Biological occurrence); BSU (Biological study, unclassified); OCU (Occurrence, unclassified); POL (Pollutant); BIOL (Biological study); OCCU (Occurrence)
(sources and dispersion of, environmental pollution by, and health hazards from persistent org. compds. worldwide)
IT 92-52-4D, Biphenyl, chloro derivs. 132-64-9D, Dibenzofuran, chloro derivs. 262-12-4D, Dibenzo-p-dioxin, chloro derivs.
RL: ADV (Adverse effect, including toxicity); BOC (Biological occurrence); BSU (Biological study, unclassified); OCU (Occurrence, unclassified); POL (Pollutant); BIOL (Biological study); OCCU (Occurrence)
(sources and dispersion of, environmental pollution by, and health hazards from persistent org. compds. worldwide)
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Anon; Handbook of Environmental Fate and Exposure data for Organic Chemicals. Pesticides 1991, P6
(2) Colburn, T; Environmental Health Perspectives 1993, V101(5), P378
(3) Gray; Advances in modern Environmental Toxicology 1993, P203 MEDLINE
(4) Nair, A; Bull Environ Contam Toxicol 1996, V56, P58 CAPLUS
(5) World Health Organization; Executive Summary, Assessment of the health risk of dioxins: re-evaluation of the Tolerable Daily Intake (TDI), http://www.who.int/pcspubs/dioxin-exec-sum/exe-sum-final.html 1998

L7 ANSWER 6 OF 30 CAPLUS
AN 2001:364632 CAPLUS
DN 134:362330
TI The potential pathway of dioxins in grassland husbandry
AU Yamada, Akihisa
CS Natl. Grassland Res. Inst., Senbonmatsu 768, Nishinasuno, Tochigi, 329-2793, Japan
SO Grassland Science (2001), 47(1), 72-79
CODEN: GRSCFG
PB Nippon Sochi Gakkai
DT Journal; General Review
LA Japanese

CC 4-0 (Toxicology)
Section cross-reference(s): 17

AB A review with 57 refs. 'Dioxins' is the generic term given to polychlorinated dibenzo-p-dioxins, polychlorinated dibenzofurans, and coplanar-PCB. Dioxins are produced during various **combustion** processes and also unwanted **byproducts** of the manuf. of certain chlorinated compds. As a result, dioxins are ubiquitous environmental contaminants and are generally present in very low concns. in all foods including cows' milk and beef. It is currently considered that food is the primary source of human exposure to dioxins. The pathways of entry into food chains include the atm. transport of emissions and their subsequent deposition on plants, soil, and water. The major food sources seem to be fat-contg. **animal** products in Europe and America, and seafoods in Japan, where **animal** products are the second important source. Dioxin concn. in retail cow's milk in Japan seems to be as same as that in England. Generally, dioxins and other lipophilic compds. are not little absorbed and translocated by plants, so residues in foods and feeds derived from seeds should be negligible. **Animals** that ingest high-roughage diets are the most likely to accumulate dioxins from the environment. Still, however, their are many unclear points on dioxins. So, the conclusion that forage is a major source of **animal** exposure to dioxins requires verification by appropriate forage sampling and field in investigation. We must appeal to society for redns. in the gross discharge of dioxins, while at the same time attempt our own technol. innovation.

ST review dioxin environment food

IT Environmental pollution
Feed contamination
Food contamination
(potential pathway of dioxin in grassland husbandry)

IT 92-52-4D, Biphenyl, chloro derivs. 132-64-9D, Dibenzofuran, chloro derivs. 262-12-4D, Dibenzo-p-dioxin, chloro derivs.
RL: ADV (Adverse effect, including toxicity); BPR (Biological process); BSU (Biological study, unclassified); POL (Pollutant); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(potential pathway of dioxin in grassland husbandry)

AN 2001:314619 CAPLUS
DN 135:15264

TI Seveso Women's Health Study: does zone of residence predict individual TCDD exposure?

AU Eskenazi, B.; Mocarelli, P.; Warner, M.; Samuels, S.; Needham, L.; Patterson, D.; Brambilla, P.; Gerthoux, P. M.; Turner, W.; Casalini, S.; Cazzaniga, M.; Chee, W.-Y.
CS School of Public Health, University of California at Berkeley, Berkeley, CA, 94720-7360, USA

SO Chemosphere (2001), 43(4-7), 937-942
CODEN: CMSHAF; ISSN: 0045-6535
PB Elsevier Science Ltd.
DT Journal
LA English

CC 4-3 (Toxicology)

AB The compd., 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD), is produced as an unwanted **byproduct** of various chem. reactions and **combustion** processes, including the manuf. of chlorinated phenols and derivs. In **animals**, TCDD exposure is assocd. with toxic, carcinogenic, developmental, and reproductive effects. In 1976, a chem. plant explosion in Seveso, Italy, exposed the residents in the surrounding community to the highest exposure to TCDD known in humans. Materials from an aerosol cloud of sodium hydroxide, sodium trichlorophenate and TCDD were deposited over an 18.1 km2 area. As evidence of the significant

level of TCDD exposure, numerous **animals** died and 193 cases of chloracne were reported among residents of the area. Initially, the contaminated area was divided into 3 major exposure Zones (A, B, R) based on the concn. of TCDD in surface soils.To date, the majority of epidemiol. studies conducted in Seveso have used Zone of residence as a proxy measure of exposure. The purpose of the present study is to validate the use of Zone of residence in Seveso as a proxy measure of exposure against individual serum TCDD measurement, and to det. whether questionnaire information can improve the accuracy of the exposure classification. Using data collected from the Seveso Women's Health Study (SWHS), the first comprehensive epidemiol. study of the reproductive health of women in Seveso, we detd. that Zone of residence is a good predictor of individual serum TCDD level, explaining 24% of the variance. Using questionnaire information could have improved prediction of individual exposure levels in Seveso, increasing the percent of the variation in serum TCDD levels explained to 42%.

ST dioxin health risk reproductive toxicity Seveso

IT Skin, disease
(chloracne; possibility of predicting zone of residence individual TCDD exposure of female population in Seveso)

IT Blood serum
Environmental pollution
Health hazard
(possibility of predicting zone of residence individual TCDD exposure of female population in Seveso)

IT Toxicity
(reproductive; possibility of predicting zone of residence individual TCDD exposure of female population in Seveso)

IT 1746-01-6, 2,3,7,8-Tetrachlorodibenzo-p-dioxin
RL: ADV (Adverse effect, including toxicity); POL (Pollutant); BIOL (Biological study); OCCU (Occurrence)
(possibility of predicting zone of residence individual TCDD exposure of female population in Seveso)

RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD

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(1) Allen, J; Ann New York Acad Sci 1979, V320, P419 CAPLUS
(2) Anon; Fetocidal and Teratogenic Actions of TCDD 1984
(3) Anon; Polychlorinated dibenzo-para-dioxins and polychlorinated dibenzofurans 1997, V69
(4) Barsotti, D; Bull Environ Contam Toxicol 1979, V21, P463 CAPLUS
(5) Bertazzi, P; Epidemiology 1993, V4, P398
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(7) Bjerke, D; Toxicol Appl Pharmacol 1994, V127, P241 CAPLUS
(8) Courtney, K; Bull Environ Contam Toxicol 1976, V16, P674 CAPLUS
(9) Fara, G; Prevention of Physical and Mental Congenital Defects Part B 1985, P279 MEDLINE
(10) Gray, L; Toxicol Appl Pharmacol 1995, V131, P108 CAPLUS
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(12) Li, X; Toxicol Appl Pharmacol 1995, V133, P321 CAPLUS
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L7 ANSWER 8 OF 30 CAPLUS COPYRIGHT 2002 ACS
AN 2001:276938 CAPLUS
DN 135:154922
TI Biomass resource facilities and biomass conversion processing for fuels and chemicals
AU Demirbas, A.
CS P.K. 216, Trabzon, TR-61035, Turk.
SO Energy Conversion and Management (2001), 42(11), 1357-1378
CODEN: ECMADL; ISSN: 0196-8904
PB Elsevier Science Ltd.
DT Journal; General Review
LA English
CC 52-0 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 16, 17, 43, 51, 60
AB A review with 35 refs. Biomass resources include wood and wood wastes, agricultural crops and their waste **byproducts**, municipal solid waste, **animal** wastes, waste from food processing and aquatic plants and algae. Biomass is used to meet a variety of energy needs, including generating electricity, heating homes, fueling vehicles and providing process heat for industrial facilities. The conversion technologies for utilizing biomass can be sepd. into four basic categories: direct **combustion** processes, thermochem. processes, biochem. processes and agrochem. processes. Thermochem. conversion processes can be subdivided into gasification, pyrolysis, supercrit. fluid extn. and direct liquefaction. Pyrolysis is the thermochem. process that converts biomass into liq., charcoal and non-condensable gases, acetic acid, acetone and methanol by heating the biomass to .apprx.750 K in the absence of air. If the purpose is to maximize the yield of liq. products resulting from biomass pyrolysis, a low temp., high heating rate, short gas residence time process would be required. For high char prodn., a low temp., low heating rate process would be chosen. If the purpose is to maximize the yield of fuel gas resulting from pyrolysis, a high temp., low heating rate, long gas residence time process would be preferred.
ST review biomass conversion fuel chem
IT Biomass
Fuel gas manufacturing
Fuels
Refuse derived fuels
Thermal decomposition
(biomass resource facilities and biomass conversion processing for fuels and chems.)
RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L7 ANSWER 9 OF 30 CAPLUS COPYRIGHT 2002 ACS
AN 2001:198541 CAPLUS
TI Photodecomposition of NO2
AU Belfield, Kevin D.; Karpf, John J.; Yavuz, Ozlem
CS Department of Chemistry and School of Optics/CREOL, University of Central Florida, Orlando, FL, 32816-2366, USA
SO Abstr. Pap. - Am. Chem. Soc. (2001), 221st, CHED-498
CODEN: ACSRAL; ISSN: 0065-7727
PB American Chemical Society
DT Journal; Meeting Abstract
LA English
AB Nitrogen dioxide (NO2) is a common **byproduct** of hydrocarbon fuel **combustion** in the atm. from **combustion** engines. The presence of toxic NO2 is ominous and a major health and environmental concern, leading to respiratory problems in humans and **animals**, degrdn. of materials (building/structural materials, tires, etc.) and ozone depletion. Thus, there is great incentive to develop cost-effective NOx redn. technologies. Among the promising remediation strategies are those based on photodecompn. We report efforts directed towards lab. photodecompn. of NO2, simulating ambient conditions.

L7 ANSWER 10 OF 30 CAPLUS COPYRIGHT 2002 ACS
AN 2001:137329 CAPLUS
DN 134:165648
TI Glycerine-based fuel for diesel engines
IN Wiedermann, Karl
PA Tomberger, Gerhard, Austria; Hauser, Bengt
SO PCT Int. Appl., 5 pp.
CODEN: PIXXD2
DT Patent
LA German
IC ICM C10L001-00
CC 52-1 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 51

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001012756	A2	20010222	WO 2000-AT223	20000817
	WO 2001012756	A3	20010830		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

	AT 9901421	A	20010915	AT 1999-1421	19990818
PRAI	AT 1999-1421	A	19990818		

AB The fuel for diesel engines consists of glycerin 25-70, soaps 5-40, water 3-25, and methanol 0.1-50 wt.%, which are arised as **byproducts** in the biodiesel prodn. The biodiesel prodn. is carried out by transesterification of **vegetable** and/or **animal** fats and oils by treatment with methanol. The diesel fuel is used in a mixt. with other **ignitable** compds. The fuel is inexpensive and the disposal of the **byproducts** can be avoided.

ST fuel diesel engine glycerin methanol; biodiesel prodn byproduct glycerin soap fuel

IT Soaps
RL: BYP (Byproduct); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(alkali metal; glycerin-based fuel for diesel engines)

IT Fuels
(automotive, alternative; glycerin-based fuel for diesel engines)

IT Diesel fuel substitutes
(biodiesel, residues of manufg.; glycerin-based fuel for diesel engines)

IT Transesterification
(glycerin-based fuel for diesel engines)

IT Fuels
(methanol; glycerin-based fuel for diesel engines)

IT Alkali metal salts
RL: BYP (Byproduct); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(soaps; glycerin-based fuel for diesel engines)

IT 56-81-5P, Glycerine, uses 67-56-1P, Methanol, uses
RL: BYP (Byproduct); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(glycerin-based fuel for diesel engines)

L7 ANSWER 11 OF 30 CAPLUS

AN 2001:129031 CAPLUS

DN 134:313428

TI Behaviour of meat and bonemeal/peat pellets in a bench scale fluidised bed **combustor**

AU McDonnell, K.; Desmond, J.; Leahy, J. J.; Howard-Hildige, R.; Ward, S.

CS Agricultural and Food Engineering Department, University College Dublin, Dublin, Ire.

SO Energy (Oxford, United Kingdom) (2001), 26(1), 81-90
CODEN: ENEYDS; ISSN: 0360-5442

PB Elsevier Science Ltd.

DT Journal

LA English

CC 51-22 (Fossil Fuels, Derivatives, and Related Products)
Section cross-reference(s): 14, 17, 52, 60

AB As a result of the recent Bovine Spongiform Encephalopathy crisis in the European beef industry, safe **animal byproduct** disposal is currently being addressed. One such disposal option is the **combustion** of **byproduct** material such as meat and bone meal (MBM) in a fluidized bed **combustor** (FBC) for the purpose of energy recovery. Two short series of **combustion** tests were conducted on a FBC (10 cm diam.) at the University of Twente, the Netherlands. In the first series, pellets (10 mm in diam. and approx. 10 mm in length) were made from a mixt. of MBM and milled peat, at MBM inclusion rates of 0%, 30%, 50%, 70% and 100%. In the second series of tests, the pellets were com. made and were 4.8 mm in diam. and between 12 and 15 mm long. These pellets had a wt. of about 0.3 g and contained 0%, 25%, 35%, 50% and 100% MBM inclusion with the peat. Both sets of pellets were **combusted** at 880.degree.C. The residence times in the FBC varied from 300 s (25% MBM inclusion) to 120 s (100% MBM inclusion) for the first series of pellets. Increasing compaction pressure increased the residence time. For the second series of pellets, the residence time varied from about 300 s (25% MBM inclusion) to 100 s (100% MBM inclusion). MBM was found to be a volatile product (about 65%) and co-firing it with milled peat in a pelleted feed format reduces its volatile intensity. Pellets made from 100% bone based meal remained intact within the bed and are thought to have undergone a process of calcination during **combustion**. A max. MBM inclusion rate of 35% with milled peat in a pellet is recommended from this work.

ST fluidized bed **combustion** meat bonemeal peat; mad cow disease control meat **combustion**

IT Food industry
(beef industry, wastes from; behavior of meat and bonemeal/peat pellets in a bench scale fluidized bed **combustor**)

IT Meat
(beef; behavior of meat and bonemeal/peat pellets in a bench scale fluidized bed **combustor**)

IT Bone meal
Energy
(behavior of meat and bonemeal/peat pellets in a bench scale fluidized bed **combustor**)

IT Prion diseases
(control of; behavior of meat and bonemeal/peat pellets in a bench scale fluidized bed **combustor**)

IT **Combustion**
(fluidized-bed; behavior of meat and bonemeal/peat pellets in a bench scale fluidized bed **combustor**)

IT Health
(mad cow disease control; behavior of meat and bonemeal/peat pellets in a bench scale fluidized bed **combustor**)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
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L7 ANSWER 12 OF 30 CAPLUS COPYRIGHT 2002 ACS
AN 2001:51588 CAPLUS
DN 135:170456
TI Final report on the safety assessment of PEG 20 sorbitan cocoate; PEG 40 sorbitan diisostearate; PEG 2, -5, and -20 sorbitan isostearate; PEG 40 and -75 sorbitan Lanolate; PEG 10, -40, -44, -75, and -80 sorbitan laurate; PEG 3, and -6 sorbitan oleate - Addendum to the final report on the safety assessment of polysorbates
AU Anon.
CS Washington, DC, 20036, USA
SO International Journal of Toxicology (2000), 19(Suppl. 2), 43-89
CODEN: IJTOFN; ISSN: 1091-5818
PB Taylor & Francis Ltd.
DT Journal; General Review
LA English
CC 62-0 (Essential Oils and Cosmetics)
AB A review with many refs. The PEGs sorbitan/sorbitol fatty acid esters are ethoxylated sorbitan and sorbitol esters of fatty acids that function as surfactants in cosmetic formulations. PEG is the terminol. used in the cosmetics industry for polyethylene glycol. Ingredients in a subset of this group are referred to by the cosmetics industry as polysorbates and were previously reviewed by the Cosmetic Ingredient Review (CIR) Expert Panel. These ingredients are formed by the esterification of sorbitol or sorbitan with a fatty acid, followed by the chem. addn. of ethylene oxide. 1,4-Dioxane and other water-sol. **byproducts** may be formed. Most of the available safety test data relate to the polysorbates or their components, sorbitan fatty acids, PEGs, and fatty acids, which also have completed safety assessments. These ingredients are readily hydrolyzed by blood and pancreatic lipases, with the fatty acid moiety absorbed and metabolized as any dietary fatty acid and the PEG sorbitan moiety excreted mainly in the urine. It is well recognized that PEGs are readily absorbed through damaged skin. Polysorbates have low toxicity in both acute and long-term toxicity studies using **animals**. Sorbitan esters and PEGs also were relatively nontoxic to **animals**. Growth retardation and diarrhea in mice, microscopic changes of the urinary bladder, spleen, kidneys, and gastrointestinal tract in rats, and decreased body and organ wts., diarrhea, and hepatic lesions in rats were noted in subchronic feeding studies, whereas other studies found no effects. One chronic toxicity study using hamsters noted microscopic lesions of the urinary bladder, kidneys, spleen, and gastrointestinal tract, whereas other studies in monkeys, mice, rats, dogs, and hamsters were neg. The polysorbates were nonirritating to mildly irritating in both in vivo and in vitro ocular irritation assays at concns. ranging from 1% to 100%. In teratol. studies of thalidomide, the PEG 20 sorbitan laurate vehicle (10 mL/kg) had no effect on the developing mouse embryo. In other studies, reproductive and developmental effects were seen primarily at exposure levels that were maternally toxic. It is recognized that the PEG monomer, ethylene glycol, and certain of its monoalkyl ethers are reproductive and developmental toxins. The CIR Expert Panel concluded that, as the PEGs sorbitan and sorbitol esters are chem. different from the alkyl ethers of ethylene glycol and the alkyl ethers are not present as impurities, these ingredients pose no reproductive or developmental hazard. In subchronic and chronic oral toxicity studies, the PEGs did not cause adverse reproductive effects. The polysorbates were nonmutagenic in a no. of bacterial and mammalian systems. Data were available showing that treatment of cells in culture with sorbitan oleate reduces DNA repair following UV irradn., but these data were not considered significant in view of the available carcinogenesis data. In general, the polysorbates were not oral or dermal carcinogens. Data on the cocarcinogenesis of certain sorbitan esters were pos., but only with high exposure levels and a high frequency of exposure, and the results lacked a dose response. The

polysorbates also had antitumor activity in **animal** studies. The polysorbates were nontoxic by the oral route in clin. studies, but a polysorbate vehicle for a neonatal parenteral supplement caused the deaths of 38 premature infants. The polysorbates had little potential for human skin irritation, sensitization, and phototoxicity in extensive clin. studies. Likewise, PEGs were nonsensitizers, but cases of systemic toxicity and contact dermatitis were obsd. in **burn** patients that were treated with PEG-based topical ointments. The sorbitan esters had the potential to cause cutaneous irritation in humans, and could cause sensitization in patients with damaged skin. Several of the polysorbates enhanced skin penetration of other chems. Overall, these data were considered an adequate basis for assessing the safety of the entire group. The CIR Expert Panel concluded that these ingredients were safe for use in cosmetics at the levels in current use (not more than a 25% concn.) with the caveat that they should not be used on damaged skin.

ST review safety polyethylene glycol sorbitan ester

IT Fatty acids, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(coco, esters, with ethoxylated sorbitan; safety assessment of polyethylene glycol sorbitan esters)

IT Lanolin
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(polyethylene glycol sorbitan esters; safety assessment of polyethylene glycol sorbitan esters)

IT Cosmetics
Safety
(safety assessment of polyethylene glycol sorbitan esters)

IT 9005-63-4D, coco acyl derivs. 9005-63-4D, Polyoxyethylene sorbitan, esters 9005-70-3 9062-73-1 9062-90-2 9063-46-1 34294-15-0, Sorbitol hexaoleate 54392-28-8 66794-58-9 69070-98-0 69468-27-5 70174-97-9, PEG sorbitol tetraoleate monolaurate 116095-07-9 121854-68-0 354575-58-9, PEG sorbitan tetrastearate
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(safety assessment of polyethylene glycol sorbitan esters)

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L7 ANSWER 13 OF 30 CAPLUS COPYRIGHT 2002 ACS
AN 2001:51587 CAPLUS
DN 135:185175
TI Final report on the safety assessment of PEG (polyethylene glycol)-2, -4, -6, -8, -12, -20, -32, -75, and -150 dilaurate; PEG-2, -4, -6, -8, -9, -10, -12, -14, -20, -32, -75, -150, and -200 laurate; and PEG-2 laurate SE
AU Anon.
CS Washington, DC, 20036, USA
SO International Journal of Toxicology (2000), 19(Suppl. 2), 29-41
CODEN: IJTOFN; ISSN: 1091-5818
PB Taylor & Francis Ltd.
DT Journal; General Review
LA English
CC 62-0 (Essential Oils and Cosmetics)
AB A review with many refs. PEGs dilaurate and PEGs laurate are the diesters and monoesters, resp., of polyethylene glycol and lauric acid used in a wide variety of cosmetic formulations as surfactants-emulsifying agents. PEG esters are produced by the ethoxylation of fatty acids. In general, ethoxylated fatty acids can contain 1,4-dioxane as a **byproduct** of ethoxylation. Traces of the reactants (fatty acid, ethylene oxide, and any catalysts) may remain in the finished product. Current concn. of use data were not available; the highest previously reported concn. was 25%. The PEGs dilaurate and PEGs laurate are similar to the PEGs stearate and PEGs distearate, and to the components (polyethylene glycol and lauric acid); all of which have been addressed in previous safety assessments. PEGs were readily absorbed through damaged skin. Fatty acids such as Lauric Acid are absorbed, digested, and transported in **animals** and humans. The acute oral LD50 of PEG-12 laurate was > 25 g/kg in mice. In short-term feeding studies, PEGs laurate were irritating to the gastrointestinal tract, but not necrotizing. In chronic oral toxicity studies, there was some evidence of liver damage and hyperplasia in several tissues. It is generally recognized that the PEG monomer, ethylene glycol, and certain of its monoalkyl ethers are reproductive and developmental toxins. These esters and diesters are chem. different from PEG alkyl ethers and are not expected to cause adverse reproductive or developmental effects. In actual studies, PEGs stearate, and PEGs distearate did not cause reproductive or developmental toxicity, and were not carcinogenic. Likewise, PEGs were not carcinogenic. Although sensitization and nephrotoxicity were obsd. in **burn** patients treated with a PEG-based cream, no evidence of systemic toxicity or sensitization was found in studies with intact skin. Because of the

possible presence of 1,4-dioxane reaction product and unreacted ethylene oxide residues, it was considered necessary to use appropriate procedures to remove these from PEGs dilaurate and PEGs laurate ingredients before blending them into cosmetic formulations. Based on the limited data on the PEGs Dilaurate and the PEGs Laurate, on the data available on the component ingredients, and on the data available on similar PEG fatty acid esters, it was concluded that PEG-2, -4, -6, -8, -12, -20, -32, -75, and -150 dilaurate; PEG-2, -4, -8, -9, -10, -12, -14, -20, -32, -75, -150, and -200 laurate; and PEG-2 laurate SE are safe for use in cosmetics at concns. up to 25%.

ST review safety polyethylene glycol laurate

IT Safety
(safety assessment of polyethylene glycol laurates)

IT 9004-81-3 9004-81-3D, sodium/potassium laurate contg. 9005-02-1
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(safety assessment of polyethylene glycol laurates)

RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L7 ANSWER 14 OF 30 CAPLUS

AN 2000:749629 CAPLUS

DN 133:354302

TI Utilization of the gypsum from a wet limestone flue gas desulfurization process

AU Chou, M.-I. M.; Patel, V.; Lytle, J. M.; Chou, S. J.; Carty, R. H.
CS Illinois State Geological Survey, Champaign, IL, 61820, USA

SO Proceedings of the International Conference on Solid Waste Technology and Management (1999), 15th, 7B/1-7B/7
CODEN: PICSFK; ISSN: 1091-8043
PB Widener University School of Engineering
DT Journal
LA English
CC 59-4 (Air Pollution and Industrial Hygiene)
Section cross-reference(s): 19

AB The authors developed a process which converts flue gas desulfurization gypsum to ammonium sulfate fertilizer with pptd. calcium carbonate (PCC) as a **byproduct** during the conversion. Preliminary cost ests. suggested the process is economically feasible when ammonium sulfate crystals are produced in a granular size (1.2-3.3 mm), instead of a powder form; however, if addnl. revenue from the sale of the PCC for higher-value com. application is applicable, this could further improve process economics. Ammonium sulfate is known to be an excellent source of N and S in fertilizer for corn and wheat prodn. It was not known what impurities might co-exist in ammonium sulfate derived from scrubber gypsum. Before the product could be recommended for use on farmland, impurities and their impact on soil productivity had to be assessed. This study evaluated the chem. properties of ammonium sulfate made from the FGD gypsum, estd. its effects on soil productivity, and surveyed the marketability of the 2 products. Results indicated that impurities in the ammonium sulfate produced would not impose any practical limitations on its use at application levels used by farmers. The market survey showed the sale price of solid ammonium sulfate fertilizer increased significantly from 1974 at $110/ton to 1998 at $187/ton. Utilities currently pay $16-20/ton for the calcium carbonate they use in flue gas scrubber systems. Industries making **animal**-feed grade Ca supplement pay $30/ton to $67/m-ton for their calcium carbonate. Paper, paint, and plastic industries pay as much as $200-300/ton for their calcium carbonate filers. The increased sale price of solid ammonium sulfate fertilizer and the possible addnl. revenue from the sale of the PCC **byproduct** could further improve the economics of producing ammonium sulfate from FGD gypsum.

ST wet limestone flue gas desulfurization process; gypsum prodn flue gas desulfurization; ammonium sulfate fertilizer manufg desulfurization gypsum; coal **combustion** flue gas desulfurization; calcium carbonate ppt byproduct ammonium sulfate formation

IT Metals, occurrence
RL: OCU (Occurrence, unclassified); OCCU (Occurrence)
(ammonium sulfate impurities; utilizing gypsum from wet limestone flue gas desulfurization of coal-fired power prodn. flue gas to produce ammonium sulfate for fertilizer prodn. with calcium carbonate ppt. byproduct)

IT Power
(coal-fired; utilizing gypsum from wet limestone flue gas desulfurization of coal-fired power prodn. flue gas to produce ammonium sulfate for fertilizer prodn. with calcium carbonate ppt. byproduct)

IT Fertilizers
RL: IMF (Industrial manufacture); PREP (Preparation)
(nitrogen/sulfur; utilizing gypsum from wet limestone flue gas desulfurization of coal-fired power prodn. flue gas to produce ammonium sulfate for fertilizer prodn. with calcium carbonate ppt. byproduct)

IT Coal, uses
RL: NUU (Other use, unclassified); USES (Uses)
(power generation via **combustion** of; utilizing gypsum from wet limestone flue gas desulfurization of coal-fired power prodn. flue gas to produce ammonium sulfate for fertilizer prodn. with calcium carbonate ppt. byproduct)

IT Flue gas desulfurization
Flue gases

(utilizing gypsum from wet limestone flue gas desulfurization of coal-fired power prodn. flue gas to produce ammonium sulfate for fertilizer prodn. with calcium carbonate ppt. byproduct)

IT Limestone, reactions
RL: MOA (Modifier or additive use); NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(wet; utilizing gypsum from wet limestone flue gas desulfurization of coal-fired power prodn. flue gas to produce ammonium sulfate for fertilizer prodn. with calcium carbonate ppt. byproduct)

IT 7429-90-5, Aluminum, occurrence 7439-89-6, Iron, occurrence 7439-92-1, Lead, occurrence 7440-02-0, Nickel, occurrence 7440-23-5, Sodium, occurrence 7440-42-8, Boron, occurrence 7440-43-9, Cadmium, occurrence 7440-47-3, Chromium, occurrence 7440-66-6, Zinc, occurrence
RL: OCU (Occurrence, unclassified); OCCU (Occurrence)
(ammonium sulfate impurities; utilizing gypsum from wet limestone flue gas desulfurization of coal-fired power prodn. flue gas to produce ammonium sulfate for fertilizer prodn. with calcium carbonate ppt. byproduct)

IT 13397-24-5, Gypsum, processes
RL: FMU (Formation, unclassified); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); FORM (Formation, nonpreparative); PROC (Process); USES (Uses)
(fertilizer manufg. using; utilizing gypsum from wet limestone flue gas desulfurization of coal-fired power prodn. flue gas to produce ammonium sulfate for fertilizer prodn. with calcium carbonate ppt. byproduct)

IT 471-34-1P, Calcium carbonate, processes
RL: BYP (Byproduct); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); FORM (Formation, nonpreparative); PREP (Preparation); PROC (Process)
(utilizing gypsum from wet limestone flue gas desulfurization of coal-fired power prodn. flue gas to produce ammonium sulfate for fertilizer prodn. with calcium carbonate ppt. byproduct)

IT 7783-20-2, Ammonium sulfate, processes
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); FORM (Formation, nonpreparative); PROC (Process)
(utilizing gypsum from wet limestone flue gas desulfurization of coal-fired power prodn. flue gas to produce ammonium sulfate for fertilizer prodn. with calcium carbonate ppt. byproduct)

IT 7446-09-5, Sulfur dioxide, processes
RL: PEP (Physical, engineering or chemical process); POL (Pollutant); REM (Removal or disposal); OCCU (Occurrence); PROC (Process)
(utilizing gypsum from wet limestone flue gas desulfurization of coal-fired power prodn. flue gas to produce ammonium sulfate for fertilizer prodn. with calcium carbonate ppt. byproduct)

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L7 ANSWER 15 OF 30 CAPLUS
AN 1999:544722 CAPLUS
DN 131:227976

TI Olive virgin oily husk treatment with microbial inoculation
AU Zaccaria, A.
CS Milan, Italy
SO Rivista Italiana delle Sostanze Grasse (1999), 76(4), 177-179
CODEN: RISGAD; ISSN: 0035-6808
PB Stazione Sperimentale per le Industrie degli Oli e dei Grassi
DT Journal
LA Italian
CC 17-10 (Food and Feed Chemistry)
AB The ability of some microorganisms (nonpathogenic and not genetically modified) to utilize fat remaining in the virgin olive husks after milling was studied. The study used 10 samples of virgin husks with oil contents of 3-5%. Virgin husks (10 q) were stored in a well ventilated shed in a 50-100 cm layer and moistened with 1.5 L liq. contg. 109 bacteria, kept at .apprx.50% relative humidity, and turned every day for 20 days. Over subsequent 15-20 days the husks were turned over every day untill they were dry. At the end of the 35-40 day prodn. cycle a very dry husk material was obtained. The husk was then sepd. into woody kernel and pulp on sieves. The woody part can be **burned** as a fuel and the pulp used as **animal** feed. The olive husks obtained with the modern oil technol. have 2-3% oil and this treatment can better utilize this olive processing **byproduct**. This husk processing is very economical and environmentally friendly.
ST olive husk byproduct microbial fermn processing
IT Seed
(hull; olive virgin oily husk treatment with microbial inoculation)
IT Fermentation
Microorganism
Olive
(olive virgin oily husk treatment with microbial inoculation)
RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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L7 ANSWER 16 OF 30 CAPLUS COPYRIGHT 2002 ACS
AN 1999:207502 CAPLUS
DN 130:269596
TI Biomass for fluidized-bed firing. Results of a research project for the thermal utilization of rapeseed extraction shot
AU Barz, Mirko; Heinisch, Rudolf
CS Institut Energietechnik, TU-Berlin, Berlin, Germany
SO Brennstoff-Waerme-Kraft (1999), 51(3), 48-50
CODEN: BRWKAY; ISSN: 0006-9612
PB Springer-VDI-Verlag GmbH & Co. KG
DT Journal
LA German
CC 52-1 (Electrochemical, Radiational, and Thermal Energy Technology)
AB Rape extn. shot (RES) was got as a **byproduct** of the oil seed processing industry, and due to the recommendation of the EU it should not be used as protein feed in **animal** husbandry if more than a million tons were harvested annually. Expts. were performed with RES as an alternative fuel in fluidized-bed firing. The RES had a similar heating value like straw, wood, or other biomass fuels, and the properties of RES as fuel were described. The compn. of the residual flue gas was analyzed, and the **combustion** plant is also described.

ST   fluidized bed **combustion** rapeseed extn shot biomass power
     generation
IT   **Combustion**
        (fluidized-bed; power generation by fluidized-bed **combustion**
        of rapeseed extn. shot)
IT   Power
        (generation; power generation by fluidized-bed **combustion** of
        rapeseed extn. shot)
IT   Biomass
     Rapeseed
        (power generation by fluidized-bed **combustion** of rapeseed
        extn. shot)

L7   ANSWER 17 OF 30 CAPLUS COPYRIGHT 2002 ACS
AN   1998:504843 CAPLUS
DN   129:160943
TI   Nutritive magnesium sulfite/magnesium sulfate binder for animal feed
IN   Webb, Bob
PA   USA
SO   U.S., 6 pp.
     CODEN: USXXAM
DT   Patent
LA   English
IC   ICM A23K001-16
     ICS A23L001-304
NCL 426074000
CC   17-12 (Food and Feed Chemistry)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5786007	A	19980728	US 1996-674201	19960701

AB   Disclosed is an **animal** feed binder, particularly for use in forming pellets. The binder is an anhyd. complex salt formed as a **byproduct** in the desulfurization of fossil fuel **combustion** gases with magnesium oxide. The magnesium sludge from the desulfurization process is dewatered, dried and ground into a powder not larger than about minus 7 U.S. Sieve mesh. The anhyd. complex salt contains a major portion of magnesium sulfite (greater than 50% by wt. to about 80% by wt.) and a minor portion of magnesium sulfate (from about 15% by wt. to about 45% by wt.). An **animal** feed compn. is formed by the admixt. of a dry mixt. of feed ingredients and the complex salt. When the **animal** feed compn. is contacted with water or steam, it is conditioned by the heat of hydration of the complex salt and forms a hardened **animal** feed compn. which can be extruded into pellets or formed into self-setting blocks. The binder is a nutritionally available source of sol. magnesium and sulfur and improves the strength and durability of the pellets or blocks.
ST   animal feed binder magnesium sulfite sulfate
IT   Sludges
        (magnesium; nutritive magnesium sulfite/magnesium sulfate binder for
        animal feed)
IT   Feed
        (nutritive binder; nutritive magnesium sulfite/magnesium sulfate binder
        for animal feed)
IT   Binders
     Desulfurization
     Flue gases
        (nutritive magnesium sulfite/magnesium sulfate binder for animal feed)
IT   8062-15-5, Lignosulfonic acid
     RL: FFD (Food or feed use); PEP (Physical, engineering or chemical
     process); BIOL (Biological study); PROC (Process); USES (Uses)
        (Ameribond 2X; nutritive magnesium sulfite/magnesium sulfate binder for

animal feed)
IT 7487-88-9, Magnesium sulfate, biological studies 7757-88-2, Magnesium sulfite 211236-37-2, Magbond
RL: FFD (Food or feed use); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process); USES (Uses)
(nutritive magnesium sulfite/magnesium sulfate binder for animal feed)
IT 1304-28-5, Barium oxide, occurrence 1305-78-8, Calcium oxide, occurrence 1309-48-4, Magnesium oxide, occurrence 1344-28-1, Aluminum oxide, occurrence 7446-11-9, Sulfur trioxide, occurrence 7631-86-9, Silica, occurrence 12136-45-7, Potassium oxide, occurrence 14808-60-7, Quartz, occurrence
RL: OCU (Occurrence, unclassified); OCCU (Occurrence)
(nutritive magnesium sulfite/magnesium sulfate binder for animal feed)
RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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(2) Kanemitsu; US 3892866 1975
(3) Laroche; US 5264227 1993
(4) Lee; US 5082639 1992 CAPLUS
(5) Miller; US 4994282 1991 CAPLUS
(6) Mommer; US 4631192 1986
(7) Skoch; US 4171385 1979
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(9) Smith; US 5378471 1995 CAPLUS
(10) van de Walle; US 4775539 1988
(11) van de Walle; US 4996065 1991 CAPLUS

AN 1998:97399 CAPLUS
DN 128:142297
TI Evaluation of non-food utilization of byproducts of the oil extraction of rapeseed
AU Luck, T.; Borcherding, A.
CS Fraunhofer-Institute for Food Technology and Packaging, Munchen, 81369, Germany
SO Oils-Fats-Lipids 1995, Proceedings of the World Congress of the International Society for Fat Research, 21st, The Hague, Oct. 1-6, 1995 (1996), Meeting Date 1995, Volume 3, 513-514 Publisher: P.J. Barnes & Associates, Bridgwater, UK.
CODEN: 65QOAT
DT Conference
LA English
CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
AB About 3 million metric tons of rapeseed are processed annually in Germany. The main **byproduct** of oil extn. is defatted rapeseed meal (about 1.6 million metric tons per yr), used in feed industry. If cultivation of rapeseed is increased, an oversupply of defatted rapeseed meal in the traditional feed markets may be expected. New market areas in non-food industry, where the utilization of these **byproducts** is appropriate, are being investigated. In the study described, the specific properties of rapeseed meal, lecithin and hulls were characterized and market potentials (market vol., prices and competitive products) in the non-food industry were assessed. In addn., rapeseed proteins, the major component of defatted meal, were investigated as a raw material in non-food applications. The fertilizing properties of defatted rapeseed meal compare well with those of castor meal. It seems to be suitable as a long-term fertilizer in fruit growing and **vegetable** gardening. Rapeseed lecithin shows excellent emulsification properties but lacks thermal stability. It may be used in formulations for natural pesticides. The processing of defatted rapeseed meal into protein isolates leads to high-value-added products that could be utilized in several non-food markets. Main market areas identified were biopolymers, co-binders in

paper coating, and glues and label adhesives for bottle labeling. Rapeseed hulls could be **burnt** in power-heat coupling systems. They could also be used as adsorbing agents or filling material in thermoplastics.

ST rapeseed meal defatted utilization discussion

IT Rape meal
(evaluation of non-food utilization of byproducts of the oil extn. of rapeseed)

L7 ANSWER 19 OF 30 CAPLUS COPYRIGHT 2002 ACS

AN 1997:635644 CAPLUS

DN 127:309420

TI Mixed vegetable and diesel oil as fuel

AU Zubr, J.; Matzen, R.

CS Department of Agricultural Sciences, The Royal Veterinary and Agricultural University, Frederiksberg, 1958, Den.

SO Biomass for Energy and the Environment, Proceedings of the European Bioenergy Conference, 9th, Copenhagen, June 24-27, 1996 (1996), Volume 3, 1644-1653. Editor(s): Chartier, Philippe. Publisher: Elsevier, Oxford, UK.
CODEN: 65BUA6

DT Conference

LA English

CC 52-1 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 11

AB Biofuel for diesel engines was introduced to the market in certain European countries recently. **Vegetable** oil as raw material for the biofuel originates from oilseed crops grown on set-aside land with EC subsidies. Prodn. of the biofuel includes the conversion process of esterification, requiring special equipment and a considerable input in the form of additives, energy, and labor. **Byproducts** from esterification, e.g., glycerin and polluted water, are unavoidable. To minimize the prodn. expenses and to eliminate the **byproducts,** an alternative fuel was found in the form of a mixt. contg. diesel oil and crude **vegetable** oil. For this purpose a naturally pure **vegetable** oil was chosen from seeds of false flax Camelina sativa. At the present time, Camelina is not known as an agricultural crop in practice. However, the crop can be grown under different climatic conditions using a low input and environmentally friendly cultivation without application of pesticides. Camelina oil is characterized by a high content of unsatd. fatty acids (about 90%). Iodine no. of the oil is about 160. The mixed fuel was tested in a Farymann Diesel engine, run at const. optimum load of 4.00 kW with 3260 R/min. The engine was fueled with pure diesel oil and with two mixts. contg. camelina oil. Each fuel was tested by running the engine for 250 h. Specific consumption of pure diesel oil was 271.6 g/kWh. When running the engine on the mixed fuel with 5 and 10% camelina oil, the specific consumption of fuel was 273.4 g/kWh and 277.1 g/kWh, resp. Carbon deposits on the piston and **combustion** chamber, and the amts. of soot in the exhaust gas, were similar for all tested fuels. Carbon deposits on the injection nozzle were slightly increased with increasing proportions of camelina oil in the mixed fuel. Independent of the fuel, after running for 250 h, the function of the injectors was still within the norm for ordinary performance.

ST vegetable oil diesel oil fuel blend; camelina oil diesel oil fuel blend; biofuel vegetable oil diesel oil blend; biodiesel camelina oil diesel oil blend

IT Fuels
(alternative; mixed vegetable and diesel oil as fuel)

IT Fuels
(biofuels; mixed vegetable and diesel oil as fuel)

IT Analytical numbers

(iodine no.; mixed vegetable and diesel oil as fuel)
IT Calorific value
Camelina sativa
Cetane number
Cloud point
Coking
Density
Diesel engines
Diesel fuel
Flash point
Soot
Viscosity
(mixed vegetable and diesel oil as fuel)
IT Rape oil
Soybean oil
Sunflower oil
RL: PRP (Properties)
(mixed vegetable and diesel oil as fuel)
IT Fats and Glyceridic oils, reactions
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(vegetable; mixed vegetable and diesel oil as fuel)
IT 7440-44-0, Carbon, formation (nonpreparative)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(deposits; mixed vegetable and diesel oil as fuel)
IT 57-10-3, Palmitic acid, properties 57-11-4, Stearic acid, properties
60-33-3, Linoleic acid, properties 112-80-1, Oleic acid, properties
112-86-7, Erucic acid 463-40-1, Linolenic acid 506-30-9, Arachidic
acid 5561-99-9, Gondoic acid 25448-01-5, Eicosadienoic acid
27070-56-0, Eicosatrienoic acid
RL: PRP (Properties)
(mixed vegetable and diesel oil as fuel)

L7 ANSWER 20 OF 30 CAPLUS
AN 1997:486438 CAPLUS
TI "Chlorophobia"-the irrational fear of chlorine and organochlorine compounds.
AU Gribble, Gordon W.
CS Department Chemistry, Dartmouth College, Hanover, NH, 03755, USA
SO Book of Abstracts, 214th ACS National Meeting, Las Vegas, NV, September 7-11 (1997), CHED-266 Publisher: American Chemical Society, Washington, D. C.
CODEN: 64RNAO
DT Conference; Meeting Abstract
LA English
AB Due to an aggressive publicity campaign by some environmental groups, no chem. is more feared by the general public than "chlorine." This pervasive "chlorophobia" has reached the highest levels of worldwide governments including the US Congress. Fear of chlorinated **byproducts** led Peruvian officials to curtail drinking water chlorination in 1991, and the resulting cholera epidemic has caused more than one million cases, killed more than 10,000 people, and spread to 20 Latin American countries. The ignorance of the importance and ubiquity of chlorine and organochlorine compds. in modern society is appalling. Ironically, nature is oblivious to this controversy and novel naturally occurring organochlorines continue to be discovered, which now no. in excess of 1,700. About the same no. contain bromine. These organochlorine compds. are produced by myriad marine organisms, plants, fungi, bacteria, insects, and a few higher **animals**, including humans. Chlorine gas is generated by mammalian white blood cells as part of the immune system. Natural **combustion** processes (forest fires, volcanoes) also create organochlorines, including many previously thought only to be anthropogenic. This presentation will cover the

importance of chlorine in our society and in nature, and will examine some of the origins of "chlorophobia."

L7 ANSWER 21 OF 30 CAPLUS

AN 1997:405662 CAPLUS

DN 127:35325

TI Manufacture of polypropylene-based bulky shock absorbers using vegetable blowing agents

IN Nakamura, Akihito

PA Aki Seiki Y. K., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08J009-12
ICS B29C047-00; B65D081-09; B29K105-04; B29K511-00; C08L023-10

CC 38-2 (Plastics Fabrication and Uses)
Section cross-reference(s): 60

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09111029	A2	19970428	JP 1995-297490	19951020
	JP 2843810	B2	19990106		

AB The title shock absorbers, with low heat generation during incineration, are manufd. from 70-80:20-30 mixts. of **vegetable** blowing agents (e.g., okara from tofu manufg., residue of soybean oil manufg., **byproducts** of wheat flour manufg.) and polypropylene (e.g., PN-150G), 20-30% starch as filler, and 20-30% water.

ST polypropylene based bulky shock absorber; **vegetable** blowing agent polypropylene shock absorber; okara blowing agent polypropylene shock absorber; soybean oil manufg residue blowing agent; wheat flour **byproduct** blowing agent

IT Wheat flour
(**byproduct,** blowing agents; manuf. of polypropylene-based bulky shock absorbers using **vegetable** blowing agents)

IT **Combustion** enthalpy
(low; manuf. of polypropylene-based bulky shock absorbers using vegetable blowing agents)

IT Shock absorbers
(manuf. of polypropylene-based bulky shock absorbers using vegetable blowing agents)

IT Soybean (Glycine max)
(okara, blowing agents; manuf. of polypropylene-based bulky shock absorbers using vegetable blowing agents)

IT Soybean oil
RL: TEM (Technical or engineered material use); USES (Uses)
(residue, blowing agents; manuf. of polypropylene-based bulky shock absorbers using vegetable blowing agents)

IT Blowing agents
(vegetable; manuf. of polypropylene-based bulky shock absorbers using vegetable blowing agents)

IT 9005-25-8, Starch, uses
RL: MOA (Modifier or additive use); USES (Uses)
(fillers; manuf. of polypropylene-based bulky shock absorbers using vegetable blowing agents)

IT 9003-07-0, Polypro PN-150G
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manuf. of polypropylene-based bulky shock absorbers using vegetable blowing agents)

L7 ANSWER 22 OF 30 CAPLUS

AN 1995:734709 CAPLUS
DN 123:135199
TI Application of the Naval Medical Research Institute Toxicology Detachment neurobehavioral screening battery to **combustion** toxicology
AU Ritchie, G. D.; Rossi, J., III; Macys, D. A.
CS Geo Centers, Inc., Wright-Patterson Air Force Base, OH, 45433-7903, USA
SO ACS Symposium Series (1995), 599(Fire and Polymers II), 344-65
CODEN: ACSMC8; ISSN: 0097-6156
PB American Chemical Society
DT Journal; General Review
LA English
CC 4-0 (Toxicology)
AB A review with 39 refs. A comprehensive screening battery of neurobehavioral tests, applicable to **combustion** toxicol. research, is being developed at the Naval Medical Research Institute Toxicol. Detachment (NMRI/TD) of the Tri-Service Toxicol. Consortium at Wright-Patterson AFB, OH. This screening battery, evaluating small **animal** responses, will be used to predict human neurobehavioral effects of non-lethal toxic exposures in a diversity of real world operational scenarios. While the scientific literature contains over 100,000 studies addressing effects of toxic substances on lethality or single behavioral endpoints, few have used an integrated test battery to predict toxicity effects i nreal world scenarios. Many jobs, occupations and human functions require attention and judgement, performance of precise actions in a specified sequence, fine motor control and integrated motivation. Regardless of the scenario, the crit. factor in risk assessment is the capability for prediction of the individual's ability to make decisions and execute precise behaviors that will enable mission completion. The NMRI/TD test battery is designed to evaluate the impact of individual toxicants or the interaction of combined toxicants within a complex mixt. on a specific operational performance. Current applications of the battery model human behavioral and performance deficits assocd. with acute exposure to fire gases, fire extinguishants and extinguishant **byproducts**. Validation of the battery involves comparisons of documented human deficits assocd. with exposure to acceptable levels of known toxicants or pharmaceutical drugs with **animal** responses to comparable levels of the same compds.
ST review neurobehavioral **combustion** toxicity screening
IT **Combustion** gases
Toxicity
(Naval Medical Research Institute Toxicol. Detachment neurobehavioral screening battery application to **combustion** toxicol.)
IT Behavior
(neuro, Naval Medical Research Institute Toxicol. Detachment neurobehavioral screening battery application to **combustion** toxicol.)

L7 ANSWER 23 OF 30 CAPLUS COPYRIGHT 2002 ACS
AN 1995:730517 CAPLUS
DN 123:135192
TI Toxic equivalency factor approach for risk assessment of **combustion** byproducts
AU Safe, S.; Rodriguez, L. V.; Goldstein, L. S.
CS Department of Veterinary Physiology and Pharmacology, Texas A and M University, College Station, TX, 77843-4466, USA
SO Toxicological and Environmental Chemistry (1995), 49(3), 181-91
CODEN: TECSDY; ISSN: 0277-2248
PB Gordon & Breach
DT Journal; General Review
LA English
CC 4-0 (Toxicology)
Section cross-reference(s): 59

AB A review with 37 refs. Hazard and risk assessment of individual toxic chems. utilizes data obtained from chronic toxicity and carcinogenicity studies in lab. **animals** for regulating emission, cleanup or intake levels for individual chems. This approach can be utilized for problems assocd. with a single chem. emitted from a point source; however, in most situations, toxic chems. are formed and emitted into the environment as complex mixts. of different structural classes of toxic/carcinogenic chems. Methodologies for risk assessment of complex mixts. have been developed for polychlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs) which are found as industrial and **combustion byproducts**. This methodol. is based on the common mechanism of action for these chems. and utilizes the most toxic PCDD/PCDF congener, 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD), as a ref. compd. The relative potencies or toxic equivalency factors (TEFs) are assigned to the other relevant PCDD/PCDF congeners and the TEF = EC50 or ED50(TCDD)/EC50 or ED50 (test congener). Thus, for any complex mixt. of PCDDS and PCDFs, the TCDD-like toxicity or toxic equiv. (TEQ) for the mixt. can be calcd. using the equation: TEQ = .SIGMA.[TEFi .times. PCDDi]n .times. .SIGMA.[TEFi .times. PCDFi]n where TEFi is the TEF for the individual PCDD or PCDF congener and n is the no. of compds. in each mixt. The TEF approach is currently used by regulatory agencies for risk management of PCDDs and PCDFs as well as being considered for polychlorinated biphenyls (PCBs). This paper discusses the problems assocd. with the TEF approach for risk assessment of halogenated arom. and polycyclic arom. hydrocarbons.

ST review **combustion** risk toxic equivalency factor

IT **Combustion** gases
Toxicity
(toxic equivalency factor approach for risk assessment of **combustion** byproducts)

L7 ANSWER 24 OF 30 CAPLUS COPYRIGHT 2002 ACS
AN 1994:699981 CAPLUS
DN 121:299981
TI Utilization of biogas effluent as manure
AU Jan, Asadullah; Wazir, Jan Ali; Wakil, A.A.
CS Laboratories Peshawar, PCSIR, Peshawar, Pak.
SO Pakistan Journal of Scientific and Industrial Research (1993), 36(11), 488-9
CODEN: PSIRAA; ISSN: 0030-9885
DT Journal
LA English
CC 19-6 (Fertilizers, Soils, and Plant Nutrition)
Section cross-reference(s): 60

AB Apart from providing fuel and saving energy, another important function of the biogas system is the use of digester effluent slurry as fertilizer. The chem. properties of biogas slurry **byproduct** has been examd. in relation to its use as a manure and beneficial effects on soils. The biogas plants studied were the Rural Technol. Center, PCSIR and Nasir Bagh Village. The facility at the Rural Technol. Center used 50% fresh **animal** dung and 50% water as raw materials, whereas the Nasir Bagh Village plant used a 50% fresh dung and 50% of a mixt. of straw, tree leaves, and water. The slurry collected from the biogas unit at the Rural Technol. Center contained nitrogen, phosphorus, and potassium in a ratio of approx. 2:1:1. During fermn. in the gas plant, about 27% of the **animal** dung is converted into **combustable** gas and the remaining 73% is available for use as manure. The slurry from Nasir Bagh contained these nutrients in an approx. 2:1:2 ratio. The difference in K seems to be due only to the raw material fed to the digester. The nitrogen content in the slurry in mostly in oxidized forms (nitrate and nitrite). The digestable nitrogen in the form of ammonium is higher in the slurry collected from the biogas unit. Because of its increased

ammonium content, the biogas slurry has more value as a fertilizer than the raw material.

ST biogas effluent slurry nutrient fertilizer use

IT Wastewater
(usefulness of biogas effluent as fertilizer)

IT Fertilizers
RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)
(usefulness of biogas effluent as fertilizer)

IT Manure
(usefulness of biogas effluent as manure)

IT Fuel gases
(biogas, usefulness of biogas effluent as fertilizer)

IT 14798-03-9, Ammonium, biological studies
RL: AGR (Agricultural use); BOC (Biological occurrence); BSU (Biological study, unclassified); OCU (Occurrence, unclassified); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(usefulness of biogas effluent as fertilizer in relation to its ammonium content)

L7 ANSWER 25 OF 30 CAPLUS

AN 1994:442107 CAPLUS

DN 121:42107

TI Polychlorinated dibenzo-p-dioxins and dibenzofurans in cod (Gadus morhua) from the northwest Atlantic

AU Hellou, J.; Payne, J. F.

CS Sci. Branch, Dep. Fish. Oceans, St. John's, NF, Can.

SO Marine Environmental Research (1993), 36(2), 117-28
CODEN: MERSDW; ISSN: 0141-1136

DT Journal

LA English

CC 61-2 (Water)

AB Muscle, liver, and ovaries of 7-9 yr old female cod (Gadus morhua) caught in the Northwest Atlantic, off Labrador, Canada were analyzed for congeners and selected isomers of PCDDs and PCDFs. PCDDs and PCDFs were not detected in either muscle or ovaries (<0.1 to 0.8 pg/g, wet wt.), while the congener T4CDF predominated in liver (9.7 ng/g lipid) followed by P5CDF and O8CDD (1.6 ng/g lipid), H6CDD (0.6 ng/g lipid) and T4CDD (0.2 ng/g lipid). The total concns. in cod from the Northwest Atlantic were lower than those in cod from waters around Norway and Finland and are well below levels assocd. with adverse effects on **animal** or human health. The area of fish collection in the Labrador Sea is far removed from industrial (effluent) sources of pollution and urban assocd. plastic garbage incineration. The dioxins and furans in major fish populations in the Northwest Atlantic could be fossil fuel **combustion byproducts** a significant proportion of which may originate from trawler fleets on the surrounding fishing banks.

ST cod chlorodibenzodioxin chlorodibenzofuran northwest Atlantic

IT Food contamination
(by polychlorinated dibenzodioxins and furans, of cod from northwestern Atlantic Ocean)

IT Cod
(polychlorinated dibenzodioxins and furans in, from northwestern Atlantic Ocean)

IT Liver
(polychlorinated dibenzodioxins and furans in, of cod from northwestern Atlantic Ocean)

IT 132-64-9D, Dibenzofuran, chloroderivs. 262-12-4D, Dibenzo-p-dioxin, chloro derivs. 3268-87-9, Octachlorodibenzo-p-dioxin 30402-14-3, Tetrachlorodibenzofuran 30402-15-4, Pentachlorodibenzofuran 34465-46-8 36088-22-9, Pentachlorodibenzo-p-dioxin 37871-00-4, Heptachlorodibenzo-p-dioxin 38998-75-3, Heptachlorodibenzofuran 39001-02-0, Octachlorodibenzofuran 41903-57-5, Tetrachlorodibenzo-p-dioxin

55684-94-1, Hexachlorodibenzofuran
RL: OCCU (Occurrence)
(in liver of cod from northwestern Atlantic Ocean)

L7 ANSWER 26 OF 30 CAPLUS COPYRIGHT 2002 ACS
AN 1988:224213 CAPLUS
DN 108:224213
TI In situ utilization of biogas on a poultry farm: heating, drying, and animal brooding
AU Jiang, Zhenghou; Steinsberger, S. C.; Shih, Jason C. H.
CS Dep. Poult. Sci., North Carolina State Univ., Raleigh, NC, 27695-7608, USA
SO Biomass (1987), 14(4), 269-81
CODEN: BIOME9; ISSN: 0144-4565
DT Journal
LA English
CC 52-1 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 17, 19, 45, 60
AB Biogas produced from a North Carolina State University poultry waste digester system was evaluated for in situ utilization. A hot-water dryer consisting of a biogas water heater, an Al drying bed, and a circulation pump was designed, constructed, and tested for drying the sludge collected from the digester; the system has a 55% overall efficiency and the drying productivity increased linearly as the circulating water temps. increased. The solid product generated this way could be used as feed supplement or fertilizer. Three types of com. **animal** brooders originally fueled by C3H8 or natural gas were mech. modified to **burn** biogas as fuel. They were initially tested for sludge drying, but heating efficiencies were low, 13-30%. In use as regular **animal** brooders, stable **combustion** of biogas and comfortable floor temps. can be maintained with proper mech. adjustments. The use of biogas for brooding young chicks on a poultry farm can significantly reduce the natural gas or C3H8 fuel cost. The results of these studies offer alternative utilizations of biogas energy in addn. to electricity generation. The drying of sludge can recover a valuable solid **byproduct,** while presenting an **animal** farm free of waste.
ST biogas manure poultry farm utilization; heating poultry farm biogas; drying feed supplement biogas
IT Heating systems and Heaters
(biogas-fueled, for brooders in poultry farm)
IT Waste solids
(from anaerobic digestion of poultry wastes for biogas manuf., drying of, for feed supplement and fertilizer)
IT Fuel gas manufacturing
(biogas, from poultry manure, for in-situ utilization in farm, for heating and drying and animal brooding)
IT 74-82-8P, Methane, preparation
RL: PREP (Preparation)
(manuf. of gas contg., from poultry manure, for in-situ utilization in farm, for heating and drying and animal brooding)

L7 ANSWER 27 OF 30 CAPLUS COPYRIGHT 2002 ACS
AN 1986:480792 CAPLUS
DN 105:80792
TI Alkyd resins
IN Lesek, Frantisek; Hajek, Karel; Kitzler, Jaroslav; Barta, Zdenek; Macku, Vladislav
PA Czech.
SO Czech., 4 pp.
CODEN: CZXXA9
DT Patent
LA Czech

IC C09D003-64
CC 42-8 (Coatings, Inks, and Related Products)
Section cross-reference(s): 37
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CS 223338	B	19830915	CS 1982-2157	19820329

AB Polyesterification of polycarboxylic acids or anhydrides, polyols, **vegetable** oils, and fatty acids to give alkyd resins is accelerated 20-50% by removal of **byproducts** from the reactor with a gas stream (N2, CO2, air, **combustion** gas) preheated to .ltoreq.200.degree. into an auxiliary extractor, where the reaction components are extd. with the reaction mixt., H2O, or aq. alkali hydroxide and returned to the polyesterification. Thus, a mixt. of linseed oil 2520, pentaerythritol 550, and PbO 0.41 kg was heated in a reactor to 240.degree. for 2 h with 2 m3/h CO2 passing through into an Raschig-packed extractor, and then with 930 kg phthalic anhydride added, to 250.degree. with 6 m3/h CO2 stream. Previously prepd. alkyd (40 kg/h) is led into the extractor. In the final stage of polyesterification, 30 m3/h CO2 and 60 kg/h extn. alkyd were introduced until the acid no. decreased to <10 mg KOH/g. The prepn. required 18-20 h vs. a 30-35 h requirement for the usual polyesterification.
ST alkyd resin prepn gas stream; carbon dioxide stream alkyd prepn; multistep prepn alkyd resin
IT Linseed oil
Soybean oil
RL: PREP (Preparation)
(alkyd resin modified by, accelerated prepn. of, multistep method with gas stream for)
IT Coating materials
(alkyd resins for, accelerated prepn. of, method for)
IT Polymerization catalysts
(lead oxide, for prepn. of alkyd resin)
IT Alkyd resins
RL: PREP (Preparation)
(prepn. of, multistep with gas stream, increased rate of)
IT Polymerization
(multistage, with gas stream, for accelerated prepn. of alkyd resins)
IT 1317-36-8, uses and miscellaneous
RL: CAT (Catalyst use); USES (Uses)
(catalyst, for prepn. of alkyd resin)
IT 108-31-6DP, polymers with pentaerythritol and phthalic anhydride, linseed oil-modified
RL: PREP (Preparation)
(prepn. of, accelerated, multistep method with gas stream for)
IT 85-44-9DP, polymer with pentaerythritol, linseed oil-modified
115-77-5DP, polymer with phthalic anhydride, linseed oil-modified
RL: PREP (Preparation)
(prepn. of, multistep with gas stream, accelerated rate in)

L7 ANSWER 28 OF 30 CAPLUS COPYRIGHT 2002 ACS
AN 1986:71406 CAPLUS
DN 104:71406
TI Alcoholysis tests of vegetable oils with natural catalysts for the production of diesel fuels
AU Graille, J.; Lozano, P.; Pioch, D.; Geneste, P.
CS Div. Chim. Corps Gras, IRHO-CIRAD, Montpellier, 34032, Fr.
SO Oleagineux (1985), 40(5), 271-6
CODEN: OLEAAF; ISSN: 0030-2082
DT Journal
LA French
CC 51-9 (Fossil Fuels, Derivatives, and Related Products)

Section cross-reference(s): 45, 52

AB The methanolysis of **vegetable** oils is catalyzed by ashes from the **combustion** of plant wastes such as coconut shells or fibers of a palm tree that contain K2CO3 and Na2CO3, the methanolysis catalysts. Thus, the methanolysis of palm oil by refluxing 2 h with MeOH in the presence of coconut shell ash gave 96-98% Me esters contg. only 0.8-1% soap. Refining by washing with water and distn. gave Me esters of sufficient quality for use as diesel-fuel extenders. The **byproduct** glycerol [56-81-5] could be used as the process fuel or refined for sale. Ethanolysis of **vegetable** oils over the readily accessible ash catalysts gave lower yields and less pure esters than the methanolysis.

ST diesel fuel methanolysis vegetable oil; ash alk carbonate methanolysis catalyst

IT Methanolysis catalysts
(ashes contg. alk. carbonates, for vegetable oils)

IT Fuels, diesel
(extenders for, Me esters as, methanolysis of vegetable oils in prepn. of)

IT Esters, uses and miscellaneous
RL: USES (Uses)
(coco, as diesel fuel extenders)

IT 471-34-1, uses and miscellaneous 497-19-8, uses and miscellaneous 546-93-0 584-08-7
RL: USES (Uses)
(ashes contg., as methanolysis catalysts for vegetable oils)

IT 56-81-5P, preparation
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in methanolysis of vegetable oils)

L7 ANSWER 29 OF 30 CAPLUS COPYRIGHT 2002 ACS

AN 1982:107067 CAPLUS

DN 96:107067

TI Cow manure bio-gas production and utilization in an integrated farm system at the Alabang Dairy project

AU Alviar, C. J.; Baoy, G. T.; Calangi, D. B., Jr.; Castillo, A. C.; Averion, M. O.; Elefano, S. C.; Santos, R. S.; Benet, R.; Hocon, R.

CS Philippines

SO Philippine Journal of Animal Industry (1981), 36(1-4), 34-49
CODEN: PJAIAG; ISSN: 0048-3761

DT Journal

LA English

CC 52-1 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 11, 23, 60

AB An integrated farming setup consisting of a biogas digester, a Chlorella pond, a fish pond, a feedlot, and a **vegetable** garden was established in a 300-m2 area to explore the possibility of using cow manure for biogas prodn. and its **byproducts** (sludge and effluent) for Chorella culture, fish and livestock prodn. and for crop cultivation. Two 14.2 m2 digesters fed daily with wastes from 50 milking cows produced 10.0-21.5 m3 biogas/day. The biogas use was 9.5 m3 to run refrigerator and 5 **burners**. A 52-m2 pond produced 5.5 and 2.5 kg dried Chorella/wk during summer and rainy seasons, resp. Dried Chorella could substitute 50% of the conc. without adversely affecting the overall performance of the growing buffaloes. Chlorella And/or sludge can also be tapped as a nonconventional protein feed for fattening cattle.

ST manure biogas manuf integrated farm; Chlorella cattle feed integrated farm

IT Manure
(cattle, biogas manuf. from, by fermn. in integrated farm system)

IT Chlorella
Fish
(cultivation of, in integrated farm system for biogas manuf. from

manure by fermn.)

IT Plant growth and development
(in integrated farm system for biogas manuf. from manure by fermn.)

IT 74-82-8P, preparation
RL: PREP (Preparation)
(manuf. of gas contg., from manure by fermn. in integrated farm system)

L7 ANSWER 30 OF 30 CAPLUS

AN 1969:2604 CAPLUS

DN 70:2604

TI Cattle feed from citric acid by-products

IN Dewulf, August

SO Belg., 9 pp.
CODEN: BEXXAL

DT Patent

LA French

CC 17 (Foods)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI BE 697754		19671002	BE	19670428

AB Citric acid fermentation by-products with 70% moisture contg. Aspergillus niger are treated in a rotating drum at 90-100.degree. for 1-4 min. in the presence of fuel oil **combustion** gases to give a dehydrated product. The treatment suppresses the antibiotic activity of A. niger.

ST cattle feed prodn; citric acid fermn; feedstuff **byproduct** fermn; **animal** feed prodn

IT Feed, preparation
(citric acid fermentation waste as cattle)

IT Aspergillus
(niger, citric acid fermentation by, cattle feed from wastes in)

IT 77-92-9P, preparation
RL: PREP (Preparation)
(manuf. of, cattle feed from wastes in)